

- 17 -

**Claims:**

1. A fuel cell system, comprising:
  - (a) a fuel cell for driving a load;
  - (b) a first process fluid delivery device for supplying a first process fluid to the fuel cell;
  - (c) a controller for controlling an operation rate of at least the first process fluid delivery device; and
  - (d) a signal source external to the controller, for providing a signal to the controller to change the operation rate of at least the first process fluid delivery device.
2. A fuel cell system as claimed in claim 1, wherein the controller is operable to increase the operation of the first process fluid delivery device to a maximum capacity based on the signal.
3. A fuel cell system as claimed in claim 1, wherein the signal source comprises a user input module.
4. A fuel cell system as claimed in claim 1, wherein the signal source comprises a load meter for sensing at least one of a first value representing a current in a load circuit and a second value representing a rate at which the current changes in the load circuit;
- 20 wherein the controller is operable to increase the operation rate of the first process fluid delivery device based on at least one of the first value and the second value.
5. A fuel cell system as claimed in claim 4, wherein the controller comprises a processor for comparing at least one of the first value with a first value threshold and a second value with a second value threshold, and for controlling the controller to increase the operation rate of the first process fluid

- 18 -

delivery device to its maximum capacity when at least one of the first value exceeds the first value threshold and the second value exceeds the second value threshold.

6. The fuel cell system as claimed in claim 4 wherein the controller 5 is operable to continuously vary the operation rate of the first process fluid delivery device based on at least one of the first value and the second value.

7. The fuel cell system as claimed in claim 4 wherein the controller is operable to switch the operation rate of the first process fluid delivery device between a plurality of levels based on at least one of the first value and 10 the second value.

8. The fuel cell system as claimed in claim 4 wherein  
the load meter is operable to read the first value; and,  
the controller is operable to change the operation rate of the first process fluid delivery device based on changes in the first value.

15 9. The fuel cell system as claimed in claim 4 wherein  
the load meter is operable to read the second value; and,  
the controller is operable to change the operation rate of the first process fluid delivery device based on changes in the second value.

10. A method of operating a fuel cell system, comprising  
20 (a) supplying a process fluid to a fuel cell at a supply rate;  
(b) driving a load using the fuel cell;  
(c) measuring at least one of a first value representing a current in the load and a second value representing a rate of change of the current in the load;

- 19 -

(d) changing the supply rate based on at least one of the first value and the second value.

(e) anticipating a change in at least one of the first and second values beyond the respective predetermined value and changing the supply rate in response thereto.

11. A method of operating a fuel cell system as claimed in claim 10, wherein step (a) comprises providing a process fluid delivery device to supply the process fluid to the fuel cell at the supply rate, and step (d) comprises providing a controller for controlling the process fluid delivery device to 10 change the supply rate based on at least one of the first value and the second value rate.

12. A method of operating a fuel cell system as claimed in claim 10, wherein step (d) comprises increasing the supply rate of the process fluid to a maximum capacity of the process fluid delivery device when at least one of 15 the first value exceeds a first value threshold and the second value exceeds a second value threshold.

13. A method of operating a fuel cell system as claimed in claim 10, wherein step (c) comprises reading a current flowing through the load to determine at least one of the first value and the second value.

20 14. The method as claimed in claim 10 wherein step (d) comprises continuously varying the operation rate of the first process fluid delivery device based on at least one of the first value and the second value.

15. The method as claimed in claim 10 wherein step (d) comprises switching the operation rate of the first process fluid delivery device between a 25 plurality of levels based on at least one of the first value and the second value.

16. The method as claimed in claim 10 wherein

- 20 -

step (c) comprises measuring the first value; and,

step (d) comprises changing the operation rate of the first process fluid delivery device based on changes in the first value.

17. The method as claimed in claim 10 wherein

5 step (c) comprises measuring the second value; and,

step (d) comprises changing the operation rate of the first process fluid delivery device based on changes in the second value.